



SOUTHWEST GAS CORPORATION

Jerome T. Schmitz, P.E., Vice President/Engineering

May 2, 2017

Mr. Kenneth Bruno
Program Manager
Gas Safety and Reliability Branch
Safety and Enforcement Division
California Public Utilities Commission
320 West 4th Street, Suite 500
Los Angeles, CA 90013

Subject: General Order 112-E Inspection of Southwest Gas Corporation's Operations and Maintenance Plan, January 2017

Dear Mr. Bruno,

Southwest Gas Corporation (Southwest Gas or Company) respectfully submits the attached response to SED's Summary of Inspection Findings letter for the General Order 112-E inspection of Southwest Gas Corporation's Operations and Maintenance Plan conducted from January 23 through 27, 2017.

We appreciate Staff's consideration of this matter and look forward to discussing any questions or concerns that you may have.

Sincerely,

Attachment

cc: T. Eng (CPUC)
D. Lee (CPUC)
C. Mazzeo
K. Lang
V. Ontiveroz



SUMMARY OF INSPECTION FINDINGS

A. SED Findings

SED found no violations.

B. Areas of Concern / Observations / Recommendations

1. Investigation of failures: Title 49 CFR §192.617 states:

“Each operator shall establish procedures for analyzing accidents and failures, including the selection of sample of the failed facility or equipment for laboratory examination, where appropriate, for the purpose of determining the causes of the failure and minimizing the possibility of recurrence.”

SWG DS-Material Investigation (MI) Procedure, Section 1.1.4.1 states:

“1.1.4.1 When a sample cannot be removed, due to operational or municipality constraints, the sample does not need to be submitted. However, an MI Data Sheet must be completed and submitted. In addition, Laboratory Services must be notified through e-mail to laboratoryservices@swgas.com.”

However, the procedure does not provide guidance on what kind of information SWG needs to capture on the MI Data Sheet for full analysis. SWG Customer Service manual for “Material Investigation Program” provides details of information on how to complete the MI Data Sheet. SED recommends the SWG DS-Material Investigation (MI) Procedure to have similar guidance.

Southwest Gas Response:

Southwest Gas agrees with SED's recommendation and will review its Operation Manual – Material Investigation Procedure and revise it as necessary to provide additional clarity. The relevant revision will be included in the Company's January 2018 Operations Manual release.

2. The following are follow up requests for the concerns raised during the 2016 inspection of SWG's O&M plan inspection.

2.1. Title 49 CFR §192.463(c) External corrosion control: Cathodic protection states:

“The amount of cathodic protection must be controlled so as not to damage the protective coating or the pipe.”

SWG CC-Corrosion Control Policy, Section 2.2.7 states:

“The amount of cathodic protection must be controlled so as not to damage the protective coating or the pipe. This is accomplished by limiting the maximum “on” pipe-to-soil potential to -2.500 volts.”



SED recommends SWG to consider Pipeline and Hazardous Materials Safety Administration (PHMSA) Corrosion Enforcement Guidance for 192.463(c) which discusses, as shown below, the need for controlling excessive polarized potentials to prevent coating disbondment and hydrogen embrittlement.

PHMSA Corrosion Enforcement Guidance for 192.463(c) states under guidance information:

"1. The use of excessive polarized potentials, more negative than approximately -1200mV, on some coated pipelines may lead to disbondment of the coating. (The amount of CP current required is directly proportional to the quality and integrity of the coating).

2. Excessive impressed CP may result in the generation of hydrogen which may cause (hydrogen) embrittlement of steel structures. (Particularly in higher strength steel as specified for API-5L grade X70 and higher pipe and in older steel pipe with hard spots)."

If available, please provide any engineering justification conducted or base line assessment in order to substantiate the -2.500 volts value.

Please also provide several examples showing the ON and Instant OFF reads where SWG found ON Potential reads more negative than -2.5V, including SWG's actions taken afterwards.

Southwest Gas Response:

Please reference Southwest Gas' response and SED's conclusion to AOC-3 (Attachment B.2) which previously addressed this area of concern. In each of the historical instances where "on" potential values were observed to be more negative than -2.500 V and could not be mitigated (none of which occurred in California), "instant off" voltage potentials reads were obtained to ensure the -1200 mV limit (consistent with the above referenced PHMSA Corrosion Enforcement Guidance) had not been exceeded. In all instances, including "on" potential reads in the -3.000 V range, the "instant off" read did not exceed -1200 mV, and no damage was identified to the protective coating or pipe.

2.2. Title 49 CFR §192.727(g) Abandonment or deactivation of facilities states:

"Each pipeline abandoned in place must be disconnected from all sources and supplies of gas; purged of gas; in the case of offshore pipelines, filled with water or inert materials; and sealed at the ends. However, the pipeline need not be purged when the volume of gas is so small that there is no potential hazard."



SWG OPS-Abandonment Procedure, Section 1.1.2.3 states:

“Lines do not need to be purged when the volume of gas is so small that no potential hazard exists.”

SWG does not have a cutoff value or criteria for when a volume of gas is so small that there is no potential hazard. For consistent application throughout its system, SED recommends setting a cutoff value or other clear criteria for when purging is not required.

SWG responded, *“Southwest Gas appreciates the SED’s recommendation and will further research this issue.”*

Please provide SWG’s research result to address the concern.

Southwest Gas Response:

Southwest Gas researched relevant published materials on this topic, and determined the following:

- PHMSA interpretations or enforcement guidance do not address the issue
- GPTC guidance related to purging an abandoned pipeline states “Generally, it is advisable to purge 8-inch and larger pipe and long segments of smaller diameter pipe”
- AGA’s Principles of Purging do not address the issue

Southwest Gas will also be reaching out to AGA member companies over the next few months to get feedback on their approach to this issue. Pending the outcome of such interactions, the Company will revise its procedures accordingly. The relevant revisions will be included in the Company’s January 2018 Operations Manual release.

3. In response to some concerns/recommendations from the 2016 O&M plan inspection letter, SWG accepted the recommendations and stated it would revise the procedures accordingly for Areas of Concern (AOCs #14, #15, and #17). However, SWG stated during this inspection that the revised procedures were recently published on 01/27/2017 and will be effective on 02/28/2017.

Please provide copies of the applicable revised procedures. SED has included the Closure Letter from SED for 2016 SWG’s O&M Plan Inspection.

Southwest Gas Response:

The applicable revised procedures, as outlined below, from Southwest Gas Operations Manual are attached as Attachments B.3.

- **AOC #14:**
 - Pipe & Component Testing – Design – Section 1.5.2 (below the table in that section)
 - Steel Welding – Procedure – Section 6.1.1 – Bullet 4



- **AOC #15:**
 - Pipe & Component Testing – Design – Section 1.8.2 – Bullet 3
 - Note: This was in the manual during the 2016 O&M Audit; however, it was overlooked. The inspectors were directed to this section during the 2017 O&M Audit.
- **AOC #17:**
 - Pipe & Component Testing – Procedures – Section 1.12.3